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PART IV

ENVIRONMENTAL PROTECTION AGENCY

■

PULP, PAPER, AND PAPERBOARD POINT SOURCE CATEGORY

Effluent Guidelines and Standards

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

SUBCHAPTER N—EFFLUENT GUIDELINES AND STANDARDS

[FRL 667-2]

PART 430—PULP, PAPER, AND PAPERBOARD POINT SOURCE CATEGORY

Promulgation

Notice is hereby given of final amendments to the interim final rulemaking promulgated on February 19, 1976. Comments were solicited on the interim final rulemaking and review of submitted comments and further analysis of the existing data base has resulted in a number of changes to the interim final regulations as set forth below. Except as specifically noted, the preamble to the interim final regulations is incorporated herein by reference. On May 29, 1974, EPA promulgated a regulation adding Part 430 to Title 40 of the Code of Federal Regulations (39 FR 18742). That regulation with subsequent amendments established effluent limitations and guidelines for existing sources and standards of performance and pretreatment standards for new sources for the pulp, paper, and paperboard point source category. The regulation set forth below will amend 40 CFR Part 430—pulp, paper, and paperboard point source category and will be applicable to existing sources pursuant to sections 301 and 304 (b) of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251, 1311, 1314 (b) and (c), 86 Stat. 816 et seq.; Pub. L. 92-500) (the Act).

A description and discussion of the legal authority for this regulation is contained in Appendix A to this preamble. Appendix B to this preamble contains definitions of the subcategories established for the purpose of identifying the best practicable control technology currently available.

Prior to this publication, many agencies and groups were consulted and given an opportunity to participate in the development of effluent limitations and standards proposed for the pulp, paper, and paperboard category. An initial draft of the Development Document was sent to all participants and comments were solicited on that report. These comments were reviewed with a result that numerous significant changes were made. A second draft of the Development Document entitled "Development Document for Advanced Notice of Proposed or Promulgated Rulemaking for Effluent Limitations Guidelines and New Source Performance Standards for the Bleached Kraft, Groundwood, Sulfite, Soda, Deink, and Non-Integrated Paper Mills Segment of the Pulp, Paper, and Paperboard Mills Point Source Category" (August 1975) was also distributed for comments. The Advance Notice of Proposed or Promulgated Rulemaking was published in the FEDERAL REGISTER on September 5, 1975. The Agency published the Advance Notice rather than propose the regulations in order to meet the court imposed deadline of January 30, 1976, and to allow the maximum possible participation of interested parties prior to promulgation of the effluent limitations as interim final. The Interim Final Regulations were published in the FEDERAL REGISTER on February 19, 1976, and the Development Document entitled "Development Document for Interim Final and Proposed Effluent Limitations Guidelines and New Source Performance Standards for the Bleached Kraft, Groundwood, Sulfite, Soda, Deink, and Non-integrated Paper Mills Segment of the Pulp, Paper, and Paperboard Point Source Category" was distributed to all interested parties following the FEDERAL REGISTER notice and comments were solicited. A substantial number of comments were received and several provided new information and data. A summary of the comments received on the interim final regulations and the Agency's response is contained in Appendix C to this preamble. Review of the comments and analysis of the submitted information along with the existing data base pointed out a number of areas in which revisions to the regulations were warranted. As a result, the final regulations as set forth contain a number of significant changes from the interim final regulations. The primary changes are listed below:

1. Annual average effluent limitations were established to be met by mills using end-of-pipe treatment systems consisting of biological treatment followed by storage ponds with controlled discharges. The annual average limitations apply only to mills which in effect are required by the NPDES authorities to use these types of treatment systems due to water quality considerations. Mills are eligible for the annual average limitations only if maximum day and average of 30 consecutive days limitations are also established in their NPDES permits.

2. The woodyard allowance was revised for all wood pulping subcategories (Subparts F, G, H, I, J, K, L, M, N, O, P, and U) into three separate allowances for specific operations in the woodyard: (a) barking, (b) log washing and chip thawing or washing, and (c) log flumes and ponds.

3. The definition of production was changed in order to clarify the meaning of annual average and provide direction to the NPDES authority.

4. The zinc limitations for the four groundwood subcategories were changed to be based upon chemical coagulation, floculation, and sedimentation of waste waters from mills using zinc hydrosulfite. The result was that the zinc limitations were made less stringent.

5. The Low Alpha Subcategory and the High Alpha Subcategory were eliminated and combined into the Dissolving Sulfite Pulp Subcategory. Within the new subcategory, four separate allowances for the different grades of sulfite dissolving pulp were established (i.e., nitration, viscose, cellophane, and acetate). In addition, the definition of the Dissolving Sulfite Pulp Subcategory was revised to include only the manufacture of dissolving sulfite pulp from softwoods.

6. The definitions of the Bleached Kraft Fine Papers and the Bleached Kraft BCT Papers Subcategories were revised to include market pulp as one of the products from mills in these subcategories.

7. The definition of the Groundwood: Chemi-mechanical Subcategory was revised to include only those mills with yields of 90 percent or higher, and the definition of the Groundwood: Thermo-mechanical Subcategory was revised to include only those mills with yields of approximately 95 percent or greater.

8. Definitions of most subcategories were revised to provide clarity and consistency between subcategory definitions.

9. The Papergrade Sulfite Subcategory was divided into two subcategories, Papergrade Sulfite (Blow Pit Wash) and Papergrade Sulfite (Drum Wash), based upon the type of pulp washing equipment. Within both subcategories, separate allowances were established for (a) barometric condensers and (b) composition of the cooking liquor. In addition, a separate allowance was established for the use of continuous digestion operations within the Papergrade (Drum Wash) Subcategory.

10. The Papergrade Sulfite Market Pulp Subcategory was eliminated since papergrade sulfite market pulp mills are now included in the revised Papergrade Sulfite Subcategory.

11. The discussion of non-water quality impacts of the regulations has been expanded in the Development Document.

12. Costs of internal controls were revised, and costs of the external controls were revised based upon revised subcategory raw waste loads and effluent limitations. The revised costs are presented in the Development Document.

13. Revised energy estimates of achieving BPCTCA are included in the Development Document.

14. Analyses of new information and data along with the existing data base resulted in revisions of the BOD5 and TSS effluent limitations in the following subparts: F, G, H, I, J, K, L, M, N, O, Q, T, and U.

The revised cost estimates were examined in terms of economic impact. It was determined that the conclusions of the economic impact analysis reached for the interim final regulations were unchanged.

The report entitled "Development Document for Final Effluent Limitations Guidelines for the Bleached Kraft, Groundwood, Sulfite, Soda, Deink and Non-Integrated Paper Mills Segment of the Pulp, Paper, and Paperboard Point Source Category" details the analysis undertaken in support of the final regulation set forth herein and is available for inspection at the EPA Public Information Reference Unit, Room 2922 (EPA Library), Waterside Mall, 401 M St., S.W., Washington, D.C., at all EPA regional offices, and at State water pollution control offices. The analysis prepared for EPA of the possible economic effects of the regulation is also available for inspection at these locations.

Copies of the Development Document are available for the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Copies of the economic analysis document are available through the National Technical Information Service, Springfield, VA 22151. (See EPA's Advance Notice of Public Review Procedures, 38 FR 21202, August 6, 1973).

In addition, Section 8 of the FWPCA authorizes the Small Business Administration, through its economic disaster loan program, to make loans to assist any small business concern in effecting additions to or alterations in their equipment, facilities, or methods of operation so as to meet water pollution control requirements under the FWPCA, if the concern is likely to suffer a substantial economic injury without such assistance.

For further details on this Federal loan program, write to EPA, Office of Analysis and Evaluation, WH-586, 401 M St., S.W., Washington, D.C. 20460.

In consideration of the foregoing, 40 CFR Part 430 is hereby amended as set forth below.

Dated: December 23, 1976.

JOHN QUARLES,
Acting Administrator.

40 CFR Part 430 is amended by revising subparts F through U as set forth below.

Subpart F—Dissolving Kraft Subcategory

Sec.
430.60 Applicability; description of the dissolving kraft subcategory.
430.61 Specialized definitions.
430.62 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart G—Market Bleached Kraft Subcategory

430.70 Applicability; description of the market bleached kraft subcategory.
430.71 Specialized definitions.
430.72 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart H—BCT Bleached Kraft Subcategory

430.80 Applicability; description of the BCT bleached kraft subcategory.
430.81 Specialized definitions.
430.82 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart I—Fine Bleached Kraft Subcategory

430.90 Applicability; description of the fine bleached kraft subcategory.
430.91 Specialized definitions.
430.92 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart J—Papergrade Sulfite (Blow Pit Wash) Subcategory

Sec.
430.100 Applicability; description of the papergrade sulfite (blow pit wash) subcategory.
430.101 Specialized definitions.
430.102 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart K—Dissolving Sulfite Pulp Subcategory

430.110 Applicability; description of the dissolving sulfite pulp subcategory.
430.111 Specialized definitions.
430.112 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart L—Groundwood-Chemi-Mechanical Subcategory

430.120 Applicability; description of the groundwood - chemi - mechanical subcategory.
430.121 Specialized definitions.
430.122 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart M—Groundwood-Thermo-Mechanical Subcategory

430.130 Applicability; description of the groundwood - thermo-mechanical subcategory.
430.131 Specialized definitions.
430.132 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart N—Groundwood-CMN Papers Subcategory

430.140 Applicability; description of the groundwood-CMN papers subcategory.
430.141 Specialized definitions.
430.142 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart O—Groundwood-Fine Papers Subcategory

430.150 Applicability; description of the groundwood-fine papers subcategory.
430.151 Specialized definitions.
430.152 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart P—Soda Subcategory

430.160 Applicability; description of the soda subcategory.
430.161 Specialized definitions.
430.162 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart Q—Deink Subcategory

430.170 Applicability; description of the deink subcategory.
430.171 Specialized definitions.
430.172 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart R—NI Fine Papers Subcategory

430.180 Applicability; description of the NI fine papers subcategory.
430.181 Specialized definitions.
430.182 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart S—NI Tissue Papers Subcategory

430.190 Applicability; description of the NI tissue papers subcategory.
430.191 Specialized definitions.
430.192 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart T—NI Tissue (FWP) Subcategory

430.200 Applicability; description of the NI tissue (FWP) subcategory.
430.201 Specialized definitions.
430.202 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart U—Papergrade Sulfite (Drum Wash) Subcategory

430.210 Applicability; description of the papergrade sulfite (drum wash) subcategory.
430.211 Specialized definitions.
430.212 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

Subpart F—Dissolving Kraft Subcategory

§ 430.60 Applicability; description of the dissolving kraft subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of dissolving pulp by kraft mills.

§ 430.61 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production in air-dry-tons (10% moisture) divided by the number of operating days during that year. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking opera-

tions which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.62 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	23.6	12.25	6.9
TSS	37.3	20.05	11.06
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	47.2	24.5	13.8
TSS	74.6	40.1	22.1
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	3.2	1.7	0.95
TSS	6.9	3.75	2.0
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	6.4	3.4	1.9
TSS	13.8	7.5	4.0
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.35	0.2	0.1
TSS	0.7	0.4	0.2
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.7	0.4	0.2
TSS	1.4	0.8	0.4
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.6	0.35	0.2
TSS	1.45	0.8	0.4
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	1.2	0.7	0.4
TSS	2.9	1.6	0.8
pH		Within the range 5.0 to 9.0.	

Subpart G—Market Bleached Kraft Subcategory

§ 430.70 Applicability; description of the market bleached kraft subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of market pulp by bleached kraft mills.

§ 430.71 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production in air-dry-tons (10 percent moisture) divided by the number of operating days during that year. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for noncontinuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.72 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	15.45	8.05	4.5
TSS	30.4	16.4	9.0
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	30.9	16.1	9.0
TSS	60.8	32.8	18.0
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	2.3	1.2	0.7
TSS	5.3	2.85	1.55
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	4.6	2.4	1.4
TSS	10.6	5.7	3.1
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.2	0.1	0.1
TSS	0.6	0.3	0.15
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.4	0.2	0.2
TSS	1.2	0.6	0.3
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.4	0.2	0.15
TSS	1.15	0.6	0.35
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.8	0.4	0.3
TSS	2.3	1.2	0.7
pH		Within the range 5.0 to 9.0.	

Subpart H—BCT Bleached Kraft Subcategory

§ 430.80 Applicability; description of the BCT bleached kraft subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of paper-board, coarse paper, and tissue paper by bleached kraft mills.

§ 430.81 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured in the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10 percent moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations, established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.82 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	13.65	7.1	4.0
TSS	24.0	12.9	7.1
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	27.3	14.2	8.0
TSS	48.0	25.8	14.2
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	2.25	1.2	0.65
TSS	5.75	3.1	1.7
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	4.5	2.4	1.3
TSS	11.5	6.2	3.4
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.25	0.15	0.05
TSS	0.65	0.35	0.2
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.5	0.3	1.0
TSS	1.3	0.7	0.4
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.45	0.25	0.1
TSS	1.25	0.7	0.35
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.9	0.5	0.2
TSS	2.5	1.4	0.7
pH		Within the range 5.0 to 9.0.	

Subpart I—Fine Bleached Kraft Subcategory

§ 430.90 Applicability; description of the fine bleached kraft subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and fine papers by bleached kraft mills.

§ 430.91 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured in the off-the-machine moisture content whereas market pulp shall be measured in air-drytons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.92 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	10.6	5.5	3.1
TSS	22.5	11.0	6.55
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	21.2	11.0	6.1
TSS	44.3	23.8	13.2
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	1.95	1.0	0.55
TSS	5.3	2.85	1.55
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	3.9	2.0	1.1
TSS	10.6	5.7	3.1
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.2	0.1	0.05
TSS	0.55	0.3	0.15
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.4	0.2	0.1
TSS	1.1	0.6	0.3
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.35	0.2	0.1
TSS	1.15	0.6	0.3
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.7	0.4	0.2
TSS	2.3	1.2	0.6
pH		Within the range 5.0 to 9.0.	

Subpart J—Papergrade Sulfite (Blow Pit Wash) Subcategory

§ 430.100 Applicability; description of the papergrade sulfite (blow pit wash) subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper by papergrade sulfite mills, which use blow pit pulp washing techniques.

§ 430.101 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured in the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10 percent moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharged unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for noncontinuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for noncontinuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

(e) Sulfite cooking liquor shall be defined as bisulfite cooking liquor when the pH of the liquor is between 3.0 and 6.0 and as acid sulfite cooking liquor when the pH is less than 3.0.

§ 430.102 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	31.8	16.35	9.3
TSS	43.95	23.65	13.0
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	63.6	33.1	18.6
TSS	87.9	47.3	26.0
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	2.7	1.45	0.8
TSS	7.5	3.95	2.2
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	5.4	2.9	1.6
TSS	15.0	7.9	4.4
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.15	0.1	0.06
TSS	2.55	1.35	0.75
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.3	0.2	0.1
TSS	5.1	2.7	1.5
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.35	0.2	0.1
TSS	1.7	0.9	0.5
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.7	0.4	0.2
TSS	3.4	1.8	1.0
pH		Within the range 5.0 to 9.0.	

(e) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of bisulfite cooking liquor and barometric condensers, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	2.9	1.5	0.85
TSS	8.25	4.45	2.45
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	5.8	3.0	1.7
TSS	16.5	8.9	4.9
pH		Within the range 5.0 to 9.0.	

(f) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of acid sulfite cooking liquor and surface condensers, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.5	0.25	0.15
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	1.0	0.5	0.3
pH		Within the range 5.0 to 9.0.	

(g) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of acid sulfite cooking liquor and barometric condensers, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	3.75	1.95	1.1
TSS	8.25	4.45	2.45
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	7.5	3.9	2.2
TSS	16.5	8.9	4.9
pH		Within the range 5.0 to 9.0.	

Subpart K—Dissolving Sulfite Pulp Subcategory

§ 430.110 Applicability; description of the dissolving sulfite pulp subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of pulp by dissolving sulfite mills.

§ 430.111 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production in air-dry-tons (10 percent moisture) divided by the number of operating days during that year. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operatings shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for noncontinuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for noncontinuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.112 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	41.4	21.5	12.1
TSS	70.65	38.05	20.9
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	82.8	43.1	24.2
TSS	141.3	76.1	41.8
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.7	0.35	0.2
TSS	0.15	0.1	0.05
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	1.4	0.7	0.4
TSS	0.3	0.2	0.1
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.15	0.1	0.05
TSS	0.15	0.1	0.05
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.3	0.2	0.1
TSS	0.3	0.2	0.1
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.15	0.1	0.05
TSS	0.15	0.1	0.05
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.3	0.2	0.1
TSS	0.3	0.2	0.1
pH		Within the range 5.0 to 9.0.	

(e) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the production of viscose grade dissolving sulfite pulp, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production which includes this grade.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	2.9	1.5	0.85
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	5.8	3.0	1.7
pH		Within the range 5.0 to 9.0.	

(f) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the production of cellophane grade dissolving sulfite pulp, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production which includes this grade.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	6.65	3.45	1.95
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	13.3	6.9	3.9
pH		Within the range 5.0 to 9.0.	

(g) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the production of acetate grade dissolving sulfite pulp, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production which includes this grade.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	9.4	4.9	2.75
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	18.8	9.8	5.5
pH		Within the range 5.0 to 9.0.	

Subpart L—Groundwood-Chemi-Mechanical Subcategory

§ 430.120 Applicability; description of the groundwood-chemi-mechanical subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper by groundwood chemi-mechanical mills.

§ 430.121 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured in the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart

for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.122 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	13.5	7.05	3.95
TSS	19.75	10.65	5.85
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	27.0	14.1	7.9
TSS	39.5	21.3	11.7
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.9	0.45	0.25
TSS	2.6	1.45	0.8
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	1.8	0.9	0.5
TSS	5.2	2.9	1.6
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.05	0.05	0.05
TSS	0.25	0.15	0.1
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.1	0.1	0.1
TSS	0.5	0.3	0.2
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.15	0.05	0.05
TSS	0.55	0.3	0.15
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.3	0.1	0.1
TSS	1.1	0.6	0.3
pH		Within the range 5.0 to 9.0.	

(f) For those mills using zinc hydrosulfite as a bleaching agent in the manufacturing process, the following effluent limitations are to be added to the base limitations set forth in paragraph (a):

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
Zinc	0.34	0.17	0.115
English units (pounds per ton of product)			
Zinc	0.68	0.34	0.20

Subpart M—Groundwood—Thermo—Mechanical Subcategory

§ 430.130 Applicability; description of the groundwood—thermo—mechanical subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of pulp and paper by groundwood thermo—mechanical mills.

§ 430.131 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured in the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.132 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	10.6	5.55	2.1
TSS	15.55	8.35	4.6
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	21.2	11.1	6.2
TSS	31.1	16.7	9.2
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.9	0.45	0.3
TSS	2.7	1.45	0.75
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	1.8	0.9	0.6
TSS	5.4	2.9	1.5
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.05	0.05	0.05
TSS	0.3	0.15	0.05
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.1	0.1	0.1
TSS	0.6	0.3	0.1
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due

to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.15	0.1	0.05
TSS	0.6	0.35	0.15
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.3	0.2	0.1
TSS	1.2	0.7	0.3
pH		Within the range 5.0 to 9.0.	

(f) For those mills using zinc hydrosulfite as a bleaching agent in the manufacturing process, the following effluent limitations are to be added to the base limitations set forth in paragraph (a):

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
Zinc	0.26	0.13	0.065
English units (pounds per ton of product)			
Zinc	0.52	0.26	0.17

Subpart N—Groundwood–CMN Papers Subcategory

§ 430.140 Applicability; description of the groundwood–CMN papers subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and coarse paper, molded pulp products, and newspaper by groundwood mills.

§ 430.141 Specialized definitions.

For the purpose of this subpart: (a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured in the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.142 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	7.45	3.9	2.2
TSS	12.75	6.85	3.75
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	14.9	7.8	4.4
TSS	25.5	13.7	7.5
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	1.15	0.55	0.3
TSS	2.0	1.1	0.6
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	2.3	1.1	0.6
TSS	4.0	2.2	1.2
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.15	0.05	0.05
TSS	0.2	0.15	0.1
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.3	0.1	0.1
TSS	0.4	0.3	0.2
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.25	0.1	0.05
TSS	0.45	0.25	0.15
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.5	0.2	0.1
TSS	0.9	0.5	0.3
pH		Within the range 5.0 to 9.0.	

(f) For those mills using zinc hydrosulfite as a bleaching agent in the manufacturing process, the following effluent limitations are to be added to the base limitations set forth in paragraph (a):

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
Zinc	0.30	0.15	0.10
English units (pounds per ton of product)			
Zinc	0.60	0.30	0.20

Subpart O—Groundwood—Fine Papers Subcategory

§ 430.150 Applicability; description of the groundwood-fine papers subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and fine paper by groundwood mills.

§ 430.151 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured in the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.152 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	6.85	3.6	2.0
TSS	11.75	6.3	3.45
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	13.7	7.2	4.0
TSS	23.5	12.6	6.9
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristic	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	1.1	0.55	0.35
TSS	1.95	1.1	0.6
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	2.2	1.1	0.7
TSS	3.9	2.2	1.2
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.15	0.05	0.05
TSS	0.2	0.15	0.1
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.3	0.1	0.1
TSS	0.4	0.3	0.2
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.2	0.05	0.05
TSS	0.4	0.25	0.15
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.4	0.1	0.1
TSS	0.8	0.5	0.3
pH		Within the range 5.0 to 9.0.	

(f) For those mills using zinc hydrosulfite as a bleaching agent in the manufacturing process, the following effluent limitations are to be added to the base limitations set forth in paragraph (a):

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
Zinc	0.275	0.135	0.09
English units (pounds per ton of product)			
Zinc	0.55	0.27	0.18

Subpart P—Soda Subcategory

§ 430.160 Applicability; description of the soda subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper by soda mills.

§ 430.161 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured in the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10 percent moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.162 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization

and effluent levels established [illegible] however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed	Effluent limitations: Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	12.7	7.1	4.0
TSS	24.5	13.2	7.25
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	27.4	14.2	8.0
TSS	49.0	26.4	14.5
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed	Effluent limitations: Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	2.05	1.1	0.6
TSS	5.25	2.8	1.5
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	4.1	2.2	1.2
TSS	10.5	5.6	3.1
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed	Effluent limitations: Annual average of daily values for 1 year shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.15	0.1	0.06
TSS	0.5	0.25	0.15
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.3	0.2	0.1
TSS	1.0	0.5	0.3
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Effluent limitations: Average of daily values for 30 consecutive days shall not exceed	Effluent limitations: Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.3	0.2	0.1
TSS	1.1	0.55	0.25
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.6	0.4	0.2
TSS	2.2	1.1	0.7
pH		Within the range 5.0 to 9.0.	

Subpart Q—Deink Subcategory

§ 430.170 Applicability; description of the deink subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper by deink mills.

§ 430.171 Specialized definitions.

For the purpose of this subpart: (a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured in the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations

for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive days effluent limitations set forth in this subpart.

§ 430.172 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristic	Effluent limitations		
	Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	18.1	9.4	5.3
TSS	24.05	12.05	7.1
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	36.2	18.8	10.6
TSS	48.1	25.9	14.2
pH		Within the range 5.0 to 9.0.	

Subpart R—NI Fine Papers Subcategory

§ 430.180 Applicability; description of the NI fine papers subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of fine paper by non-integrated mills.

§ 430.181 Specialized definitions.

For the purpose of this subpart: (a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.182 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	8.2	4.25	2.4
TSS	11.0	5.0	3.25
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	16.4	8.5	4.8
TSS	22.0	11.8	6.5
pH		Within the range 5.0 to 9.0.	

Subpart S—NI Tissue Papers Subcategory

§ 430.190 Applicability; description of the NI tissue papers subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of tissue papers by non-integrated mills.

§ 430.191 Specialized definitions.

For the purpose of this subpart: (a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.192 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	11.4	6.25	3.5
TSS	10.25	5.0	2.85
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	22.8	12.5	7.0
TSS	20.5	10.0	5.7
pH		Within the range 5.0 to 9.0.	

Subpart T—NI Tissue (FWP) Subcategory

§ 430.200 Applicability; description of the NI tissue (FWP) subcategory.

The provisions of this subpart are applicable to discharges resulting from the production of tissue paper from waste paper by non-integrated mills.

§ 430.201 Specialized definitions.

For the purpose of this subpart: (a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Production shall be in terms of off-the-machine moisture content. Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of

the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

§ 430.202 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	13.7	7.1	4.0
TSS	17.05	9.2	5.05
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	27.4	14.2	8.0
TSS	34.1	18.4	10.1
pH		Within the range 5.0 to 9.0.	

Subpart U—Papergrade Sulfite (Drum Wash) Subcategory

§ 430.210 Applicability; description of the papergrade sulfite (drum wash) subcategory.

The provisions of this subpart are applicable to discharges resulting from the integrated production of pulp and paper by papergrade sulfite mills, using vacuum or pressure drums in their pulp washing operations.

§ 430.211 Specialized definitions.

For the purpose of this subpart:

(a) Except as provided below, the general definitions, abbreviations and methods of analysis set forth in 40 CFR Part 401 shall apply to this subpart.

(b) Production shall be defined as the annual off-the-machine production (including off-the-machine coating where applicable) divided by the number of operating days during that year. Paper production shall be measured in the off-the-machine moisture content whereas market pulp shall be measured in air-dry-tons (10% moisture). Production shall be determined for each mill based upon past production practices, present trends, or committed growth.

(c) Wet barking operations shall be defined to include hydraulic barking operations and wet drum barking operations which are those drum barking operations that use substantial quantities of water in either water sprays in the barking drums or in a partial submersion of the drums in a "tub" of water.

(d) A non-continuous discharger is a mill which is prohibited by the NPDES authority from discharging pollutants during specific periods of time for reasons other than treatment plant upset control, such periods being at least 24 hours in duration. A mill shall not be deemed a non-continuous discharger unless its permit, in addition to setting forth the prohibition described above, requires compliance with the effluent limitations established by this subpart for non-continuous dischargers and also requires compliance with maximum day and average of 30 consecutive days effluent limitations. Such maximum day and average of 30 consecutive days effluent limitations for non-continuous dischargers shall be established by the NPDES authority in the form of concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available in lieu of the maximum day and average of 30 consecutive day effluent limitations set forth in this subpart.

(e) Sulfite cooking liquor shall be defined as bisulfite cooking liquor when the pH of the liquor is between 3.0 and 6.0 and as acid sulfite cooking liquor when the pH is less than 3.0.

§ 430.212 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available.

In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, raw materials, manufacturing processes, products produced, treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different

factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations.

(a) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, which may be discharged by a point source subject to the provisions of this subpart after application of the best practicable control technology currently available, except that all point sources other than non-continuous dischargers shall not be subject to the annual average limitations, and that non-continuous dischargers shall not be subject to the maximum day and average of 30 consecutive days limitations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	26.7	13.9	7.8
TSS	43.95	23.65	13.0
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	53.4	27.8	15.6
TSS	87.9	47.3	26.0
pH		Within the range 5.0 to 9.0.	

(b) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of wet barking operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	3.05	1.6	0.9
TSS	7.5	3.95	2.2
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	6.1	3.2	1.8
TSS	15.0	7.9	4.4
pH		Within the range 5.0 to 9.0.	

(c) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of log washing or chip washing operations, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs and/or chips which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.35	0.2	0.1
TSS	2.55	1.35	0.75
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	0.7	0.4	0.2
TSS	5.1	2.7	1.5
pH		Within the range 5.0 to 9.0.	

(d) The following limitations establish the quantity or quality of pollutants or pollutant properties, controlled by this section, resulting from the use of log flumes or log ponds, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production due to use of logs which are subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	0.7	0.35	0.2
TSS	1.7	0.9	0.5
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	1.4	0.7	0.4
TSS	3.4	1.8	1.0
pH		Within the range 5.0 to 9.0.	

(e) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of bisulfite cooking liquor and barometric condensers (not including those mills using continuous digesters), which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	2.7	1.4	0.8
TSS	8.25	4.45	2.45
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	5.4	2.8	1.6
TSS	16.5	8.9	4.9
pH		Within the range 5.0 to 9.0.	

(f) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of acid sulfite cooking liquor and surface condensers (not including those mills using continuous digesters), which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	3.05	1.6	0.9
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	6.1	3.2	1.8
pH		Within the range 5.0 to 9.0.	

(g) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of acid sulfite cooking liquor and barometric condensers (not including those mills using continuous digesters), which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	5.8	3.0	1.7
TSS	8.25	4.45	2.45
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	11.6	6.0	3.4
TSS	16.5	8.9	4.9
pH		Within the range 5.0 to 9.0.	

(h) The following limitations establish the quantity or quality of pollutants or pollutant parameters, controlled by this section, resulting from the use of continuous digesters, which may be discharged by a point source subject to the provisions of this subpart. These limitations are in addition to the limitations set forth in paragraph (a) of this section and shall be calculated using the proportion of the mill's total production subject to such operations.

Effluent characteristics	Effluent limitations: Maximum for any 1 day	Average of daily values for 30 consecutive days shall not exceed	Annual average of daily values for 1 yr shall not exceed
Metric units (kilograms per 1,000 kg of product)			
BOD5	11.45	5.95	3.35
TSS	9.8	5.2	2.9
pH		Within the range 5.0 to 9.0.	
English units (pounds per ton of product)			
BOD5	22.9	11.9	6.7
TSS	19.6	10.6	5.8
pH		Within the range 5.0 to 9.0.	

APPENDIX A

LEGAL AUTHORITY

Section 301(b) of the Act requires the achievement by not later than July 1, 1977, of effluent limitations for point sources, other than publicly owned treatment works, which require the application of the best practicable control technology currently available as defined by the Administrator pursuant to section 304(b) of the Act.

Section 304(b) of the Act requires the Administrator to publish regulations providing guidelines for effluent limitations setting forth the degree of effluent reduction attainable through the application of the best practicable control technology currently available.

APPENDIX B

TECHNICAL SUMMARY AND BASIS FOR REGULATIONS

For the purpose of identifying the best practicable control technology currently available and in order to establish effluent limitations, the bleached kraft, groundwood, sulfite, soda, deink and non-integrated paper mills segment of the pulp, paper and paperboard manufacturing industry category was divided into sixteen discrete subcategories, primarily based on a consideration of the raw materials utilized, production processes employed, products produced, size and age of mills, waste water characteristics and treatability, geographical location, and costs and economic factors as outlined in the report entitled, "Development Document for Final Rulemaking for the Bleached Kraft, Groundwood, Sulfite, Soda, Deink and Non-Integrated Paper Mills Segment of the Pulp, Paper, and Paperboard Point Source Category". The definitions of the subcategories in the preamble to the interim final regulations have been revised and are given below.

(1) Subpart F—Dissolving Kraft Subcategory. This subcategory includes mills which produce a highly bleached pulp by a "full cook" process, utilizing a highly alkaline sodium hydroxide and sodium sulfide cooking liquor. Included in the manufacturing process is a "pre-cook" operation termed prehydrolysis. The principal product made by this process is a highly bleached and purified dissolving pulp used principally for the manufacture of rayon and other products requiring the virtual absence of lignin and a very high alpha cellulose content.

(2) Subpart G—Market Bleached Kraft Subcategory. This subcategory includes mills which produce a bleached pulp by a "full cook" process utilizing a highly alkaline sodium hydroxide and sodium sulfide cooking liquor. The product made by this process is papergrade market pulp.

(3) Subpart H—BCT Bleached Kraft Subcategory. This subcategory includes the integrated production of bleached kraft pulp and paper. Integrated production is considered to be pulp and paper manufacturing operations where all or part of the manufactured pulp is processed into paper at common or adjacent sites. The bleached kraft pulp is produced in a "full cook" process utilizing a highly alkaline sodium hydroxide and sodium sulfide cooking liquor. The principal products include paperboard (B), coarse papers (C), tissue papers (T), and market pulp.

(4) Subpart I—Fine Bleached Kraft Subcategory. This subcategory includes the integrated production of bleached kraft pulp and paper. Integrated production is considered to be pulp and paper manufacturing operations where all or part of the manufactured pulp is processed into paper at common or adjacent sites. The bleached kraft pulp is produced in a "full cook" process utilizing a highly alkaline sodium hydroxide and sodium sulfite cooking liquor. The principal products are fine papers, which include business, writing, and printing papers, and market pulp.

(5) Subpart J—Papergrade Sulfite (Blow Pit Wash) Subcategory. This subcategory includes integrated production of sulfite pulp and paper. The sulfite pulp is produced in a "full cook" process using an acidic cooking liquor of sulfites of calcium, magnesium, ammonia, or sodium. Following the cooking operations, the spent cooking liquor is separated from the pulp in the blow pits. The principal products made by this process are tissue papers, newspapers, fine papers, and market pulp.

(6) Subpart K—Dissolving Sulfite Pulp Subcategory. This subcategory includes mills which produce a highly bleached and purified pulp from softwoods by a "full cook" process using strong solutions of sulfites of calcium, magnesium, ammonia, or sodium. The pulps produced by this process are viscose, nitration, cellophane, or acetate grades and are used principally for the manufacture of rayon and other products that require the virtual absence of lignin.

(7) Subpart L—Groundwood—Chemi-Mechanical Subcategory. This subcategory includes the integrated production of chemi-mechanical groundwood pulp and paper. The chemi-mechanical groundwood pulp is produced utilizing a chemical cooking liquor to partially cook the wood followed by mechanical defibration by refining with or without brightening, resulting in yields of 90% or greater. The principal products include fine papers, newsprint, and molded fiber products.

(8) Subpart M—Groundwood—Thermo-Mechanical Subcategory. This subcategory includes the production of thermo-mechanical groundwood pulp and paper. The thermo-mechanical groundwood is produced by a brief cook utilizing steam, with or without the addition of cooking chemicals such as sodium sulfite, followed by mechanical defibration by refiners which are frequently under pressure with or without brightening, and resulting in yields of approximately 95% or greater. The principal products of this process are market pulp, fine papers, newsprint, and tissue papers.

(9) Subpart N—Groundwood—CMN Papers Subcategory. This subcategory includes the integrated production of groundwood pulp and paper. The groundwood pulp is produced, with or without brightening, utilizing only mechanical defibration by either stone grinders or refiners. The principal products made by this process include coarse papers (C), molded fiber products (M), and newsprint (N).

(10) Subpart O—Groundwood—Fine Papers Subcategory. This subcategory includes the integrated production of groundwood pulp and paper. The groundwood pulp is produced, with or without brightening, utilizing only mechanical defibration by either stone grinders or refiners. The principal products are fine papers which include business, writing, and printing papers.

(11) Subpart P—Soda Subcategory. This subcategory includes the integrated production of bleached soda pulp and paper. The bleached soda pulp is produced by a "full cook" process utilizing a highly alkaline sodium hydroxide cooking liquor. The principal products are fine papers, which include printing, writing, and business papers, and market pulp.

(12) Subpart Q—Deink Subcategory. This subcategory includes the integrated production of deinked pulp and paper. The deinked pulp is usually brightened or bleached from waste papers in which an alkaline treatment is utilized to remove contaminants such as ink and coating pigments. The principal products include printing, writing and business papers, tissue papers, and newsprint.

(13) Subpart R—NI Fine Papers Subcategory. This subcategory includes non-integrated (NI) mills which produce fine papers from wood pulp or deinked pulp prepared at another site. The principal products of this process are printing, writing, business, and technical papers.

(14) Subpart S—NI Tissue Papers Subcategory. This subcategory includes non-integrated (NI) mills which produce tissue papers from wood pulp or deinked pulp prepared at another site. The principal products of this process include facial and toilet papers, glassine, paper diapers, and paper towels.

(15) Subpart T—NI Tissue (FWP) Subcategory. This subcategory includes non-integrated (NI) mills which produce tissue papers from waste papers (FWP) without deinking. The principal products made by this

process include facial and toilet papers, glassine, paper diapers, and paper towels.

(16) Subpart U—Papergrade Sulfite (Drum Wash) Subcategory. This subcategory includes integrated production of sulfite pulp and paper. The sulfite pulp is produced in a "full cook" process using an acidic cooking liquor of sulfites of calcium, magnesium, ammonia, or sodium. Following the cooking operations, the spent cooking liquor is washed from the pulp on vacuum or pressure drums. Also included are mills using belt extraction systems for pulp washing. The principal products made from pulp manufactured by this process are tissue papers, fine papers, newspapers, and market pulp.

APPENDIX C

SUMMARY OF PUBLIC PARTICIPATION

Prior to this publication, many agencies and groups were consulted and given an opportunity to particiapte in the development of effluent limitations and standards proposed for the pulp, paper, and paperboard category. An initial draft of the Development Document was sent to all participants and comments were solicited on that report. These comments were reviewed with a result that numerous significant changes were made. A second draft of the Development Document entitled "Development Document for Advanced Notice of Proposed or Promulgated Rule Making for Effluent Limitations Guidelines and New Source Performance Standards for the Bleached Kraft, Groundwood, Sulfite, Soda, Deink, and Non-Integrated Paper Mills Segment of the Pulp, Paper, and Paperboard Mills Point Source Category" (August 1975) was also distributed for comments. The Advance Notice of Proposed or Promulgated Rulemaking was published in the FEDERAL REGISTER on September 5, 1975. The Agency published the Advance Notice rather than propose the regulations in order to meet the court imposed deadline of January 30, 1976, to allow the maximum possible participation of interested parties prior to promulgation of the effluent limitations as interim final. The Interim Final Regulations were published in the FEDERAL REGISTER on February 19, 1976, and the Development Document entitled "Development Document for Interim Final and Proposed Effluent Limitations Guidelines and New Source Performance Standards for the Bleached Kraft, Groundwood, Sulfite, Soda, Deink, and Non-integrated Paper Mills Segment of the Pulp, Paper, and Paperboard Point Source Category" was distributed to all interested parties following the FEDERAL REGISTER notice and comments were solicited. A substantial number of comments were received, some of which provided new information and data. Review of the comments and analysis of the submitted information along with the existing data base pointed out a number of areas in which revisions to the regulations were warranted. As a result, the final regulations as set forth contain a number of significant changes from the interim final regulations.

The following are the principal agencies and groups consulted: (1) Effluent Standards and Water Quality Information Advisory Committee (established under section 515 of the Act); (2) all State and U.S. Territory Pollution Control Agencies; (3) other public agencies, interest groups, and associations; (4) U.S. Department of the Interior; (5) U.S. Department of Health, Education, and Welfare; (6) Environmental Defense Fund, Inc.; (7) Natural Resources Defense Council; (8) Water Pollution Control Federation; (9) National Wildlife Federation; (10) U.S. Department of Transportation; (11) Tennessee Valley Authority; (12) U.S. Department of Housing and Urban Development; (13) U.S. Department of Agriculture; (14) U.S. Nuclear Regulatory Commission; (15) U.S. Department of Defense; (16) U.S. Internal Revenue Service; (17) U.S. Federal Power Commission; (18) National Commission on Water Quality; (19) U.S. Federal Energy Administration; (20) Water Resources Council; (21) Office of Management and Budget; (22) Council on Environmental Quality; (23) U.S. Department of Treasury; (24) National Council for Air and Stream Improvement, Inc., Technical Association of the Pulp and Paper Industry; (25) American Paper Institute; (26) The American Society of Mechanical Engineers; (27) Businessman for the Public Interest; (28) The American Society of Civil Engineers; and (29) the Izaak Walton League.

The following responded with comments on the Notice of Interim Final Rulemaking: St. Regis Paper Co.; State of Texas; Union Camp Corporation; Council on Wage and Price Stability; P. H. Gladfelter Co.; Scott Paper Co.; State of Wisconsin; Northwest Pulp and Paper Assn.; Hammermill Paper Co.; Alaska Lumber and Pulp Co.; Crown Zellerbach Corp.; U.S. Department of the Interior; U.S. Department of Health, Education, and Welfare; National Council of the Paper Industry for Air and Stream Improvement, Inc.; Mead Corp.; State of Minnesota; Kimberly-Clark Corp.; American Can Co.; Fibreboard Corp.; Louisiana-Pacific Corp.; Weyerhaeuser Co.; Nekoosa Papers Corp.; International Paper Co.; The Buckeye Cellulose Corp.; Georgia-Pacific Corp.; Ketchikan Pulp Co.; American Paper Institute; The Procter and Gamble Co.; and Boise-Cascade Corp.

The primary issues raised in the comments on the interim final effluent limitations and the treatment of these issues herein are as follows:

1. Several comments were received that stated that the low alpha dissolving pulp subcategory should be further divided to take into account the differences in raw waste load resulting from the production of the different grades of pulp (nitration, viscose, and cellophane) produced by mills within the subcategory. Data were submitted showing raw waste BOD5 loads associated with the production of each grade.

The Agency has carefully examined the submitted data and has determined that significant differences in raw waste loads result from the production of the different grades of dissolving sulfite pulp. Previous analyses had shown significant differences in raw waste loads resulting from the production of high alpha (acetate) grades and low alpha (nitration, viscose, and cellophane) grades and, therefore, two subcategories were established. Additional information and data have shown that it is more appropriate to establish one subcategory for all dissolving sulfite pulp mills and provide four specific allowances within the one subcategory depending upon the grade of pulp: nitration, viscose, cellophane, and acetate.

2. One commenter objected to the Agency's determination that spent sulfite liquor (SSL) recovery and biological treatment represents BPCTCA for the dissolving sulfite subcategories. The commenter stated that only one mill had both SSL recovery and biological treatment when the Federal Water Pollution Control Act was passed in 1972.

In 1972, five of the six dissolving sulfite mills had SSL recovery systems and one of these mills had a biological treatment system. In addition, prior to finalizing this regulation, the Agency has found that all six dissolving sulfite mills had SSL recovery, two of the mills had biological treatment systems in place, two mills were installing biological treatment systems, and the other two mills had accepted NPDES permits which required effluent levels that were reflective of application of biological treatment systems. The Agency therefore properly determined that BPCTCA for dissolving sulfite mills includes both SSL recovery and biological treatment.

3. A number of commenters objected to the methodology used in determining the effluent limitations for the papergrade and dissolving sulfite subcategories. The objections included: (a) direct use of pilot plant data on an equal basis with full scale data without adjustment for the controlled characteristics of pilot plant operations, (b) use of activated sludge treatment system data in the analysis, and (c) use of data from both papergrade and dissolving sulfite mills in the same data analysis. One commenter stated that drawing any conclusions using the number of sulfite mills included in the analysis is questionable both on statistical and practical grounds. The commenter recommended setting effluent limitations on mill-by-mill basis as an alternative or delaying establishment of effluent limitations until more full scale biological treatment data are available.

Because of the limited application of full scale biological treatment systems at papergrade and dissolving sulfite mills, the Agency has developed the effluent limitations for these mills based upon both full scale systems as well as pilot plant operations at sulfite mills. Four sulfite mills presently have biological treatment facilities but one of these systems was determined not to be representative of BPCTCA. A number of sulfite mills have recently operated pilot plant biological treatment systems prior to installation of full-scale facilities. In order to achieve maximum representation, the data from these mills were included in the analyses used for establishing the effluent limitations. Additional data from full scale and pilot plant treatment systems at sulfite mills were submitted and have been included in reanalyzing the available data.

The Agency agrees that pilot plants are sometimes operated under certain controls in order to determine how effective the treatment system is in reducing the raw waste load. However, in scale-up to a full sized system, conservative design considerations are generally included in sizing the pieces of equipment in order to assure achievement of a specific effluent quality. This has been demonstrated by mill 512. Pilot plant data from mill 512 were used in the data analysis. Mill 512 is now designing a full scale system based upon its pilot plant operations to achieve effluent qualities equal to or better than those achieved by the pilot plant. Thus, the Agency believes that the use of pilot plant data along with full scale data is entirely proper.

The effluent limitations are based upon both activated sludge systems (AS) and aerated stabilization basins (ASB). Either of these systems is capable of achieving the effluent limitations and exclusion of activated sludge systems would therefore be inappropriate. Commenters contend that activated sludge systems can achieve better effluent qualities on an annual basis than aerated stabilization basins with standard designs. However, the commenters have also stated that activated sludge systems have higher effluent variabilities than aerated stabilization basins. The statistical reliability of each of the systems was examined and maximum 30 consecutive days and maximum day effluent limitations have been established which can be achieved by either system. Furthermore, examination of treatment systems in use by mills in other subcategories which have extensive experience with biological treatment performance shows that in many cases aerated stabilization basins are achieving better quality effluents than activated sludge systems. The contention that activated sludge systems cost more than aerated stabilization basins was considered in the economic impact analysis. In gen-

eral, it was determined that mills can install activated sludge treatment systems and maintain a competitive profitability level.

The Agency has determined that the use of both papergrade sulfite and dissolving sulfite data in the data analysis is fully justified and appropriate. Treatability of the waste waters are similar even though dissolving sulfite mills have higher raw waste loads. This would be expected since the manufacturing operations are similar in that similar raw materials and cooking and bleaching liquors are used. As an example, mill 401 produces both papergrade and dissolving sulfite pulp at separate times by changing operating conditions. The mill treats the raw waste waters generated during the production of either papergrade pulp or dissolving grade pulp in the same biological treatment system to comparable effluent quality.

The existing data base includes information and data from every sulfite mill in the country along with data from a number of foreign mills. Included in the data base therefore is information and data concerning the effects of such factors as different treatment technologies, different chemical bases, wood species, and ages and sizes of mills. Thorough examination of the available information and statistical analyses have shown that it is appropriate and technically practicable to establish effluent limitations from the existing data base.

4. Two commenters expressed concern that the Agency has not given sufficient attention to the adverse effects of sludge incineration, including air emissions and consumption of fuel oil.

The discussion in Section VIII of the Development Document on non-water quality impacts has been expanded to include the potential impacts of sludge incineration on air emissions and consumption of fuel oil. The potential impacts are not considered to be significant because air pollution control technologies are available. The Agency has determined that very few mills, if any at all, will install sludge incinerators.

5. One commenter contended that the costs presented in the Development Document were low and therefore, the economic impact was understated. The commenter was concerned that the costs of sludge incineration were not included and he questioned several of the basic design parameters used in the cost estimates including detention times and aeration capacities.

The Agency has examined the specific design variables pointed out in the comments and has evaluated the costs of sludge incineration. Several cost figures were revised and these are presented in the Development Document in addition to the costs of sludge incineration which are displayed separately. After consideration of the costs of sludge incineration, it has been determined that the differences in costs cause no significant differences in the results of the economic impact analysis.

6. Several commenters objected to the Agency's consideration of costs and effluent reduction benefits. The commenters felt that the Agency should examine the cost versus the benefits of alternative treatment systems, and one of the commenters stated that the Agency should do this for every mill in one of the subcategories. Examples were provided for two dissolving sulfite mills showing costs and effluent reductions associated with various levels of treatment. One of these showed the costs of five treatment alternatives (four of the five are considered to be less than full treatment of the mill waste waters) and the percent BOD removals associated with each treatment alternative.

Included in Section IX of the Development Document are total costs of treatment versus total effluent reduction benefits. The discussion has also been expanded to include the costs of treatment versus the effluent reduction benefits for model mills within each subcategory. Development of treatment alternatives for individual mills within each subcategory is beyond the scope of what Congress intended the Administrator to do in setting national effluent limitations.

7. A few commenters indicated that the Agency had not adequately considered non-water quality environmental impacts and had ignored indirect non-water quality environmental impacts.

The Agency has carefully considered all direct non-water quality environmental impacts of the effluent limitations. Such impacts were determined to be insignificant and the discussion in Section VIII of the Development Document has been expanded to more adequately explain this determination. The indirect impacts which the commenters suggested that the Agency examine include such items as impacts on energy consumption, air pollution, and solid waste generation resulting from such things as the production and transportation to the mill site of nutrients for use in biological treatment. The commenters did not provide any information or data that showed significant impacts. Evaluation of available information and data does not indicate any significant indirect impacts.

8. One of the primary concerns expressed by a number of commenters was the Agency's approach to consideration of effluent variability. The commenters stated that the Agency should provide some allowance for excursions which are beyond the control of the manufacturer, such as extended production shutdowns, catastrophic breakdowns, and labor interruptions. The commenters suggested that if no allowances for these types of excursions are provided then the effluent limitations should be increased substantially to provide some factor of safety from enforcement action by the NPDES authority for events beyond the manufacturer's control. The commenters suggested that basing the effluent limitations on 99.9 percent confidence rather than 99 percent confidence would be one method of making the effluent limitations less stringent to take this into account.

Data were analyzed from numerous pulp and paper mills in establishing variability factors to be utilized in determining the effluent limitations. The Agency included all available mill data in establishing the 99 percent confidence level for each mill, and the data analysis did not exclude any data due to such things as production shutdowns or breakdowns (See section VII of the Development Document). The use of 99 percent confidence should not be misinterpreted as meaning that mills will exceed the limitations approximately 4 times per year, or that these excursions will be due to uncontrollable factors such as shutdowns, breakdowns, and labor interruptions. While the determination of the variability factors did involve the 99 percent confidence level for mills properly operating treatment facilities representative of the best practicable control technology currently available, the variability factors were not determined by averaging the 99 percent confidence levels for all such mills. Instead, the variability factors were based upon those mills exhibiting the highest variabilities within this group (i.e., the marginal mills). For mills achieving levels better than the marginal mills, the variability factors actually represent better than 99 percent confidence and for a number of mills better than 99.9 percent confidence. Detailed examination of mills with BOD5 variability near the determined variability factors generally disclosed that treatment system operations or treatment system modifications have resulted in greater variability than would be exhibited by more properly operated treatment systems. The variability factors used in determining the effluent limitations allow for a daily maximum discharge of approximately three and one half times the pollutants discharged over the long term daily average. The Agency expects that the performance of the worst cases will be improved by proper controls and that the effluent limitations can be achieved by properly operated and maintained plants. Modification of the regulations to allow for excursions above the effluent limitations which have resulted from documented improper treatment system operations would be counter to the goals set forth by Congress to establish effluent limitations based upon the best practicable control technology currently available.

9. One commenter was concerned that clarifier sludge generated in the treatment of raw intake water was not considered in the development of the effluent limitations.

This source of waste water was not specifically addressed in the evaluation of data from the mills considered in determining the effluent limitations. However, a number of mills that discharge the raw water treatment sludge to the process waste water treatment facilities were included in the data analyses that determined the effluent limitations. The Agency believes that clarifier underflow from treatment of intake water should be treated prior to discharge and may be addressed in the NPDES permit.

10. One comment was received that stated that there was no recognition in the Development Document of the greater BOD raw waste loads resulting from a typical ammonia base dissolving sulfite mill over a magnesium base mill. The commenter stated that the higher waste load was a result of the inability of the ammonia base mill to economically neutralize the spent sulfite liquor (SSL) prior to evaporation.

The discussion in the Development Document has been expanded and includes the data on SSL neutralization which was submitted to the Agency. The subcategorization of the dissolving sulfite mills accounts for any differences in raw waste load attributable to the cooking liquor base since all of the mills using magnesium base produce similar grades of pulp (nitration, viscose, and cellophane) while all of the mills using an ammonia base primarily produce acetate grades of pulp. The type of cooking liquor chemical base was examined in relation to the raw waste loads from papergrade sulfite mills and it was determined that any impact of this factor is insignificant compared to the impact of more significant factors, such as the effectiveness of SSL recovery.

11. Several commenters felt that the Agency should either justify the assumption that the operating costs of internal controls are canceled by the operating benefits or include these costs in the Development Document and in the economic impact analysis.

The Agency has carefully reexamined the operating costs and benefits of internal controls and in every case except one has determined that the operating costs of internal controls are more than offset by the operating benefits. In fact, the analyses showed that a number of internal controls were earning positive returns on investment that were sufficient to be termed part of the manufacturing process and not pollution control. For these reasons, the capital costs for these controls were deleted from the costs tables presented in the Development Document, Section VIII.

It should be pointed out that based upon further information and data the list of internal controls applicable to BPCTCA has been revised to include several additional internal controls. Capital costs have been included in the cost tables for these added internal controls. Operating and mainte-

nance costs were again determined to be more than offset by the operating benefits of the controls, and thus operating costs were not included in the cost tables.

It should be noted that the net benefits of internal controls (over and above the costs of internal controls) were not subtracted from the annual costs. The one exception, as mentioned above, is the internal control of SSL collection and evaporation which was determined to have net operating costs associated with it. These costs are included in Section VIII of the Development Document for the sulfite subcategories and are considered as maximum costs. Most sulfite mills have installed SSL collection and evaporation systems along with incineration in order to recover as much of the heat and chemicals as possible, and significantly lesser annual costs are incurred by these mills (the operating benefits nearly cover the operating costs and amortized capital) than mills that collect and evaporate their SSL without incineration. Costs of both systems are shown in the Development Document. It should be pointed out that mills using these systems produce a saleable by-product and the benefits of the sales are not subtracted from the operating costs (see also comment number 15). After consideration of these costs in the economic impact analysis, it has been determined that the conclusions of the economic impact analysis are unchanged.

12. One commenter stated that the impact of hardwood versus softwood on raw waste load in the sulfite industry was not addressed in the Development Document. The commenter provided information and data in support of his contention that the use of hardwood by sulfite mills results in a higher raw waste load than the use of softwood.

The Agency has carefully examined the impacts on raw waste load of the use of hardwood and softwood at sulfite mills, and the discussion in the Development Document in Sections IV and V has been revised to explain the analyses. With the exception of dissolving sulfite pulp manufacturing (see comment No. 27), the Agency has determined that differences in raw waste load between sulfite mills relate to process factors rather than to the type of wood used. It should be pointed out that allowances within the papergrade sulfite subcategory have been established for the process factors which were determined to have significant impacts on raw waste load; these include: type of pulp washing equipment, type of condenser, type of digestor, cooking liquor composition, and three types of woodyard operations.

13. Several commenters stated that the rationale in the Development Document explaining the determination of the TSS limitations for the sulfite subcategories was inadequate and difficult to follow. Other commenters stated that the data base as well as the rationale were inadequate and that the TSS limitations should be made less stringent to account for the limited data base. Data were presented for mill 051 showing higher TSS levels than those used for mill 051 in the development of the effluent limitations. It was suggested that the more recent TSS data for mill 051 be used in determination of less stringent TSS limitations.

The Agency has carefully examined the basis for the TSS limitations for the sulfite subcategories and has determined that the existing data base is adequate. None of the submissions provided any further data which would improve upon the data base. However, Section IX of the Development Document has been expanded to explain the analysis used in determining the TSS limitations for the sulfite subcategories. It should be pointed out that the Agency did expand the existing data base by inclusion of available pilot plant data. Use of the pilot plant data along with the existing data base resulted in TSS levels used as the basis for the final effluent limitations which were less stringent than the TSS levels used in the interim final regulations. From information from mill 051, it was determined that the most recent data for mill 051 was representative of a period of time when the treatment facility was operated at less than optimum treatment levels and therefore was considered as less than BPCTCA.

14. Several commenters were concerned that the Development Document understated the technical problems of dewatering and disposal of sludge and as a result the costs and non-water quality impacts were not correctly represented in the documents.

The costs, technical problems associated with sludge dewatering and disposal, and the non-water quality impacts of sludge disposal have been reviewed, and the revised costs and expanded discussions of these items are presented in the Development Document.

15. Comments were received which suggested that the Agency should further subcategorize the papergrade sulfite subcategories to take into account such factors as the degree of SSL recovery, yield loss, age, geographical location, and land availability. The commenters further stated that SSL recovery varies from zero to 98 percent recovery and does not designate one single, uniform process (as in kraft) but represents various processes including pulp washing, evaporation, and incineration, evaporation and sale of SSL by-products, and fermentation of blow pit SSL into by-products.

The Agency has carefully evaluated each of these factors and has revised the subcategorization to appropriately take each factor into account. While the commenters state that SSL recovery represents various processes, the objective of SSL recovery is to recover heat and chemicals (and by-products) and to reduce the raw waste load and as such is considered as a single technology. Full recovery of SSL is considered to be at least 85 percent and many mills are commonly achieving well over 90 percent removal of SSL. Twenty-six of twenty-nine sulfite mills have SSL recovery systems and only four of these are reported to have less than full (85 percent) recovery. While the Development Document shows that SSL recovery varies from zero to 98 percent, subcategorization for mills with less than full recovery would not fulfill the congressional intent that BPCTCA be based upon commonly used internal controls. The type of SSL recovery system (i.e., incineration or by-product recovery) does not impact the raw waste load so long as similar levels of recovery are being achieved. Therefore, the fact that SSL recovery is achieved by a number of methods, such as evaporation and incineration, evaporation and sale of by-products, or fermentation of SSL, makes no difference in establishing effluent limitations since BPCTCA includes full recovery of SSL.

Examination of mills with full recovery has shown that the most significant impacts of age is in the type of pulp washing and SSL collection equipment used and the type of condenser used in the SSL recovery system at the sulfite mills. In order to take these factors into account, the papergrade sulfite subcategory was divided into two subcategories; one of the subcategories, the Papergrade Sulfite (Blow Pit Wash) Subcategory is based upon the use of the older less efficient pulp washing techniques of blow pit washing, and the other subcategory, the Papergrade Sulfite (Drum Wash) Subcategory, is based upon vacuum (or pressure) drum pulp washing. Within each of the two subcategories, provisions have also been established for mills using barometric condensers whereas the subcategory limitations are based upon surface condensers. In addition, allowances were established for continuous digestion and the composition of the cooking liquor. In establishing the subcategories, the Agency also examined the yield loss and determined that the yield loss, which indicates process factors, was adequately taken into account in the present subcategorization. The discussion in Section IV of the Development Document has been revised in order to show how factors such as yield loss were taken into account and to more thoroughly explain and support the subcategorization of the sulfite mills. It should be noted that the geographical location and land availability factor was examined and considered in the economic impact analysis for sulfite mills. Since sulfite mills which are land limited (See Section V of the Development Document) will probably install activated sludge systems and since the costs of activated sludge systems were included in the Development Document and the economic impact analysis, the Agency determined that further subcategorization based upon land availability would not be necessary.

16. Several commenters objected to the methodology used to determine the effluent limitations for the sulfite subcategories stating that the Agency should base the limitations on concentrations actually obtained by mills using the designated technology rather than on achievable concentrations. One commenter felt that excluding mill 052 from the data analysis was inconsistent with the draft Development Document.

In determining effluent limitations, it is the Agency's responsibility to evaluate the technologies presently in use by mills within the industrial category in order to determine if the treatment systems represent BPCTCA. The draft report to which the commenter referred was a contractor's draft report and in the case of mill 052, further evalutions showed that the contractor's report was in error in that the detention time of the treatment system a mill 052 was inadequate and is thereby not represenative of BPCTCA.

In order to include as much data as possible on which to base the effluent limitations, all available sulfite mill biological treatment data (with the exception of mill 052), including full scale systems and pilot plant operations, were used to determine achievable concentrations through use of biological treatment (See Comment No. 3). The achievable concentrations which were determined in the analyses are therefore based upon concentrations actually obtained by mills using the designated technology (as the commenter suggested would be proper).

17. Several commenters stated that the energy estimates in the Development Document were low and suggested that EPA reexamine the basis for the estimates.

The basis for the energy estimates have been reexamined and the Development Document has been revised to show the appropriate changes.

18. A number of commenters stated that the Agency's evaluation of the factors affecting flow and raw waste load from mills in the groundwood, bleached kraft, soda, and drink subcategories was inadequate. Some of the factors with which the commenters were concerned included the following: raw materials, including type of wood and season of harvest, geographical location including temperature impacts on manufacturing processes and external treatment efficiencies, age and type of equipment, production processes including variations in yield and bleaching, physical layout, and variations in papermaking operations including number of grades, frequency of grade changes, use of additives, and form of the final product (i.e., rolls vs sheets).

In determining the present subcategorization and the special provisions within several of the subcategories, the Agency thoroughly evaluated all of the appropriate factors including those listed above. The comments submitted were carefully reviewed and because of the length of the arguments presented are addressed in Section IV of the Development Document. Thus, Section IV has been expanded to describe more thoroughly how each of the factors was taken into account in developing the subcategorization.

19. One commenter was concerned that the Agency did not examine the reasons for differences in raw waste loads between mills and that a range of effluent limitations would be an appropriate methodology for taking into account any differences in raw waste loads between mills. Mills 108, 127, and 510 were cited as examples of mills with varying raw waste loads within the same subcategory. Another commenter contended that the differences between mill 510 and mills 127 and 108 were due to the use of hardwood at mill 510 which resulted in higher raw waste loads. The commenter felt that the Agency should take into account the higher raw waste loads due to the use of hardwoods.

The Agency examined all available information and data in determining the subcategory raw waste loads on which the effluent limitations were based. As an example of the detailed analyses which were made of mills for which data were available, the discussion in Section V of the Development Document has been expanded to present the detailed information analyzed for each mill used in determining the bleached kraft dissolving pulp subcategory raw waste load (mills 108, 127, and 510). The discussion shows that no allowances are necessary for hardwood used at mill 510 since mill 108 which uses primarily softwood has a higher raw waste load.

20. One commenter stated that the Agency has failed to demonstrate that overflow rates of 600 gallons per square foot per day will achieve the TSS limitations for the groundwood subcategories. The commenter also stated that the Agency failed to identify existing internal control technologies which would be used by groundwood mills to achieve the average raw waste loads.

The Agency has identified the internal control technologies available to groundwood mills for reduction in raw waste flow volumes. See Sections VII and VIII of the Development Document. The TSS limitations are based upon actual operating data for mills using systems representative of BPCTCA. The value of 600 gallons per square foot per day was identified as a parameter commonly used in designing secondary clarifiers (see treatment plant schematic drawings in Section VII of the Development Document) and was used in determining the costs presented in the Development Document.

21. Several comments were received that were concerned with the woodyard allowance. The commenters stated that some allowance for chip thawing or washing should be included and that the limitations should be based upon the wood yield achieved by mills within the different subcategories. One commenter provided yield data in terms of cords per ton for the groundwood, bleached kraft, and dissolving pulp subcategories.

The woodyard allowance now includes chip washing and thawing operations and was revised to reflect the different yields achieved by mills in the different pulping processes including groundwood pulps, chemical paper-grade pulps, and dissolving pulps. In addition, instead of one woodyard allowance, three separate woodyard allowances have been established depending upon the specific woodyard operation; these include: (1) barking, (2) log transport and defreezing flumes and ponds, and (3) log and chip washing and dethawing.

22. Several comments were received that stated that the Agency cost estimates were low and that the Agency estimates were based upon annual average performance whereas the limitations are based upon 30 day and daily maximums.

The effluent limitations (30 day and daily maximum) were determined from actual operating data from mills using systems representative of BPCTCA. However, the cost estimates were based upon "worst case" design parameters in many cases and as a minimum were determined upon commonly used design considerations. For example, a number of mills are achieving the effluent limitations with ASBs with detention times ranging from 8 days to 14 days. In this case, costs were based upon the 14 day ASB. Costs of activated sludge systems, however, were based upon common design considerations because detention times used by mills with activated sludge systems to achieve the effluent limitations generally do not vary as much as detention times of ASBs.

The commenters are incorrect in their statements that the cost estimates were based upon annual average performance. The cost estimates used design waste characteristics based upon the maximum 30 consecutive days. As stated previously, the Agency has thoroughly reviewed the cost estimates in the Development Document and has determined that the costs are up-to-date and accurate.

23. Four comments were submitted that stated that the Agency should recognize in the regulation that long term storage of biologically treated waste waters with short term release systems are a viable alternative to continuous discharge systems. One of the commenters provided extensive information and data for a system which stores the treated effluents for eight months and releases over a four month period. The commenters suggested that mills which are required by the NPDES authority to use these types of systems because of water quality considerations should be required to meet annual average limitations rather than the average of 30 consecutive days and maximum day limitations.

The Agency has carefully examined the submitted comments and data and has determined that it is appropriate to establish annual average effluent limitations for those mills which in effect are required to use storage ponds following their biological treatment systems because of water quality considerations. However, as defined in the regulations, mills using these types of systems (non-continuous dischargers) must also meet maximum day and average of 30 consecutive days limitations as established by the NPDES authority. In setting the maximum day and average of 30 consecutive days limitations for each non-continuous discharger, the NPDES authority will refer to Section IX of the Development Document which sets forth effluent concentrations which reflect waste water treatment levels that are representative of application of best practicable control technology currently available.

It is emphasized that the pollutant control requirements for non-continuous dischargers are not any less stringent than those for continuous dischargers but that only the format of the limitations is changed.

24. Several commenters objected to the statement in the Development Document that all of the data used was based upon twelve or more months since mills 127 and 111 have only five months and seven months of data, respectively, included in the data base. In addition, the commenters questioned the inclusion of mills with fewer data points than one per day over 12 months (i.e., mill 101 has 123 data points over 12 months). The commenters also were concerned over several alleged discrepancies in the data base for specific mills in the Development Document and for differences between data bases from previous Development Documents.

The Agency has carefully examined the submissions to determine the technical adequacy of including in the data base several mills which have less than 12 months of data and mills with fewer data points than one per day. Inclusion of these mills is appropriate as discussed in the Development Document; however, additional data have recently been received for most of these mills. The Agency agrees that several data points for specific mills were incorrect and that additional discussion in the Development Document is necessary to more fully explain and justify which mills are included in the data base and how more recent data have been combined or not combined with the previous data. The Agency has recently collected additional data for many of the mills and these data have been combined with the previous data base. As a result, the Development Document has been updated to include new data, added discussions of the data base, and has been edited to remove any incorrect data.

25. One commenter stated that the use of flow and final effluent concentrations from different mills to establish the effluent limitations resulted in irrational limitation because it is an "apples and oranges" situation.

The Agency understands the commenter's concern that the use of a low flow from one mill and the use of a low concentration from another mill (which has a high flow) could result in improper effluent limitations. However, the effluent limitations were based upon actual data from a large number of mills and therefore, the data analysis does not represent the improper analysis which the commenter suggests could occur. The appropriateness of using flows, concentrations, and variability factors to determine effluent limitations is demonstrated by the large number of mills presently achieving the effluent limitations. See Sections VII and IX of the Development Document.

26. One commenter stated that the effect of temperature on the settleability of TSS from a high rate system was not given adequate treatment. The commenter stated that increases of 20 to 30% in TSS levels in the effluent are expected during the winter months even though the treatment system has been designed for a Northern location.

The Agency recognizes that well designed and operated treatment systems may experience variability in effluent qualities at mills located in Northern climates (as well as mills in Southern climates). In this regard, the effluent limitations were determined using variability factors based upon actual mill operating data which reflect maximum 30 consecutive and maximum day values that are achieved at plants using systems representative of BPCTCA. The Agency feels that these variability factors are more than adequate to provide for effluent variability and it appears that the data provided by the commenter supports the Agency's position. The variability to which the commenter referred translates to 1.2 to 1.3 (ratio of maximum 30 days or maximum day—commenter did not specify whether his data were maximum 30 days or maximum day—to the annual average). The effluent limitations were based upon approximately 1.8 and 3.4 (ratio of maximum 30 consecutive days to annual average and ratio of maximum day to annual average, respectively), which are much higher than the commenters' data and indicate that the

Agency has more than adequately taken his concerns into account.

27. One comment was received that provided a substantial amount of raw waste and final effluent data for mill 401. The data were submitted to support the contention that the raw waste load presented in the Development Document for mill 401 and used in determining the raw waste load for the low alpha dissolving sulfite pulp subcategory was understated. Information and data were also provided showing differences in raw waste load which result from production of nitration and cellophane grades of pulp using hardwood and softwoods. The commenter contended that use of hardwoods results in significantly higher raw waste loads than the use of softwoods.

The data submitted on mill 401 have been examined and were included in determining the raw waste loads on which the effluent limitations were based for the dissolving sulfite pulp subcategory. The submitted data from mill 401 showed significant differences in raw waste loads when producing nitration grades with either hardwoods or softwoods. Since mill 401 is the only dissolving sulfite mill using hardwoods, the subcategory raw waste loads have been based upon production of pulp from softwoods. In addition, the definition of the Dissolving Sulfite Subcategory has been revised to include only the production of dissolving sulfite pulp from softwoods.

28. One commenter objected to the inclusion of vacuum drum pulp washing as an internal control in BPCTCA for dissolving sulfite mills. The commenter suggested that vacuum drum washing should be included in BATEA.

As the commenter stated, BPCTCA emphasizes end-of-pipe treatment but also includes commonly practiced inplant control measures. Since five of the six dissolving sulfite mills use vacuum drum washers (one mill of the five is presently installing vacuum drum washers), the Agency has determined that vacuum drum washers may be appropriately included in BPCTCA.

29. One comment was received that suggested that the Agency reexamine the available information and data on mill 066 because the mill has recently completed a number of inplant changes and significantly altered the raw waste load.

A member of the Agency staff recently made an on-site inspection of mill 066 in order to collect the most recent information and data. These data are presented in the Development Document but only the flow data were used along with data from other mills to determine the effluent limitations for the papergrade sulfite subcategory. The mill management stated that inplant controls had been installed, and it would be expected that a reduction in the raw waste load would have been achieved. However, the mill management also stated that close-up of the SO2 system resulted in an additional BOD5 discharge of 5,000 pounds per day (41 pounds per ton). The data for the period previous to the inplant changes and SO2 system close-up showed a BOD5 raw waste load of 260 pounds per ton (represents 12 months of data), and data for the more recent period show a raw waste load BOD5 of 383 pounds per ton (four months of data). Since the new data are for only four months of operation and since the BOD5 data are inconsistent (i.e., inplant controls other than SO2 close-up resulted in higher raw waste loads), the BOD5 data were not used in the analyses.

30. Several comments were received that stated that the effluent limitations were far less restrictive than necessary and that the limitations may not be truly representative of the goals intended by Congress. The commenters cited several examples of mills which were nearly achieving the BATEA limitations using the BPCTCA technology or mills using less than BPCTCA but nearly achieving the BPCTCA limitations. The commenters suggested that the Agency closely examine the technologies in use in relation to the effluent qualities being achieved. Data were provided.

The effluent limitations are based upon actual data from mills using systems representative of BPCTCA. The Agency has recently received additional data which were analyzed along with the original data base and the data provided by the commenters. As a result, a number of effluent limitations have been revised to more accurately reflect the levels that can be achieved by the application of BPCTCA. The information and data are presented in the Development Document along with an extensive discussion of the methodology and rationale for the determination of the effluent limitations. The Agency believes that the effluent limitations are responsive to the intent of Congress and reflect those effluent levels presently being achieved by mills using systems representative of BPCTCA.

31. One commenter objected to the use of raw waste load data from certain mills which the commenter asserts are using BATEA internal controls in determining PBCTCA raw waste loads. The commenter also sugested that the Agency should delete from the final effluent averages the data from mills employing biological treatment followed by post stabilization ponds. The commenter contended that these systems are beyond BPCTCA.

The average BPCTCA raw waste loads for each subcategory are generally based upon all mills within a subcategory for which data were available. The extent of internal controls used by mills is generally indicated by the mill's raw waste load. Since BPCTCA properly includes normally or commonly used internal controls, it is appropriate to use data from all mills to determine average raw waste loads. It should be pointed out that the Agency did examine the raw waste loads and internal controls in use by mills, and mills with exceptionally low raw waste loads were excluded from the raw waste load averages. Thus, the subcategory raw waste loads reflect commonly used internal controls and not raw waste loads associated with BATEA internal controls.

In addition, the Agency believes that final effluent BOD5 data from mills using biological treatment systems followed by post stabilization basins should be included in determining the final effluent averages. These systems are considered to be BPCTCA since mills with biological treatment systems followed by post storage ponds have generally designed their biological treatment systems to rely on some additional BOD5 reduction in the storage pond. Thus, the entire system including both the biological treatment system and the post storage pond are considered to be BPCTCA at these mills. The Agency did exclude the TSS data from the analysis but this was because the large land areas used by the post storage ponds are not always available to all mills, and the TSS reduction that occurs in the post storage ponds cannot always be achieved by mills using only an aerated stabilization basin (ASB). This is in contrast to the BOD5 levels since the BOD5 levels achieved by mills using biological treatment followed by post storage can be achieved by mills using only an ASB. Thus, the Agency based the effluent limitations on BOD5 levels on both types of systems and TSS levels only on ASBs. See Section VII of the Development Document.

32. A number of comments were received that questioned the method used to take into account the raw waste loads resulting from the production of bleached kraft market pulp at mills producing both market pulp and papers. The commenters suggested that the Agency should revise its analysis of the raw waste load at these mills and consider that the raw waste load generated by the production of market pulp is the same as that resulting from the production of papers.

The available information and data for those mills producing market pulp and papers have been reexaminated and no evidence has been found to show that higher waste loads result from the production of market pulp at these mills. The Agency therefore concurs with the commenters and has revised the method for determining the raw waste load for the bleached kraft fine papers and the bleached kraft BCT papers subcategories. Revision of the method also resulted in a change in the definition of the two subcategories to include market pulp as one of the products.

33. One commenter stated that the Agency has used treatment systems employed at Southern mills in determining BPCTCA effluent limitations but failed to consider the increased costs and economic impact for mills located in Northern locations of achieving the limitations.

The effluent limitations were based upon mills located in both the North and South and can be achieved through use of BPC TCA. The Agency has carefully considered costs and economic impacts for mills located in Northern climates. Activated sludge treatment systems were identified as BPC TCA for mills located in Northern climates and appropriate costs have been included in the Development Document and in the economic impact analysis. It should again be emphasized that the Agency is not requiring mills to install a specific type of treatment system but has identified a type of treatment system capable of achieving the effluent limitations and one that may be used to establish costs and assess the economic impact. Depending upon the specific mill situation, other types of treatment may be more desirable and less expensive, such as a three day modified activated sludge system or an aerated stabilization pond with very long detention times. Relative costs of alternative treatment systems are presented in Section VIII of the Development Document.

34. Two commenters felt that the BOD5 raw waste load of 56 pounds per ton for the groundwood thermo-mechanical subcategory was low in view of recent data from mill 041. The commenters contended that the data from mill 041 show that BOD5 levels are in the range of 90 to 100 pounds per ton and the commenters suggested that EPA take the higher raw waste load into account. In addition, one of the commenters suggested that the groundwood thermo-mechanical subcategory be split into two subcategories to take into account the predicted lower raw waste loads from thermo-mechanical mills producing newsprint such as mill 184. Data were provided for a pilot plant conducted at mill 184 which showed a BOD5 raw waste load of 65 pounds per ton.

The raw waste load for the groundwood thermo-mechanical subcategory has been revised based upon the actual operating data from mill 041 which is one of the two mills in the country producing 100% thermo-mechanical pulp. The data from mill 041 shows a raw waste BOD5 of 78 pounds per ton rather than the 90 to 100 pounds suggested to be representative in the comments. Data from the other mill, mill 028, shows substantially less BOD5 raw waste loads than for mill 041. The BOD5 raw waste load for mill 028 is approximately 40 pounds per ton. The subcategory raw waste load has been based upon mill 041 in order to conservatively take the process factors into account. The effluent limitations have also been revised to reflect the higher raw waste loads.

Since there are presently no mills producing newsprint from 100% thermo-mechanical pulping, it is considered more appropriate at this time to establish one subcategory based upon mill 041 which has a higher raw waste load than the predicted performance of mill 184.

35. One comment was received that suggested that the Agency reexamine the relationships between raw waste loads and bleaching in the bleached kraft subcategories. The commenter felt that there is every reason to believe that pulp brightness can be correlated with yield and BOD load from the bleach plant. However, the commenter did point out that the correlation may be masked to some extent by other variables.

The Agency has reviewed all available data with regard to waste loads generated within the bleach plant at bleached kraft mills. As the commenter pointed out, the incremental impacts of differences in bleaching are generally masked by other more significant variables within the mills. Most of the BOD that is generated during bleaching operations occurs in bleaching the unbleached pulp of brightness levels of 20 to 25 (% G. E.) up to brightness levels of about 75 to 80 (% G. E.). Thus, since brightness levels of the products of bleached kraft mills are generally above 80 (% G. E.), the relative differences in total raw waste BOD are insignificant when increasing brightness levels above 80 (% G. E.). In any event, the Agency believes that the present subcategorization does take into account any differences in raw waste loads as a result of bleaching operations. The available data show that dissolving kraft, market kraft, and kraft paper mills bleach to different levels of brightness (i.e., 90–92 (% G. E.), 86–90, and 80–86, respectively). Thus, the Agency believes that any effects of bleaching are taken into account in the present subcategorization which establishes the bleached kraft dissolving pulp, the bleached kraft market pulp, and the bleached kraft BCT and Fine Paper subcategories. These points are thoroughly discussed in Section IV of the Development Document.

36. One commenter suggested that the Agency use the TSS data for mills with post storage ponds which are measured between the aerated stabilization basin (ASB) and the post storage pond.

The Agency does not believe that the ASBs at these mills are representative of BPCTCA (see comment 31) and therefore, it would be inappropriate to use the TSS data measured between the ASB and the post storage pond. The Agency believes that it is more appropriate to use TSS data from a mill with an ASB without post storage. The total biological treatment system including both the ASB and the post storage pond are BPCTCA at these mills and the ASB alone is not representative of BPCTCA.

37. One commenter was concerned that the production basis for mill 512 appeared to be the maximum seven days production rather than the annual average. The commenter also stated that there was no indication in the Development Document that the Agency gave any consideration to demonstrated production capacity or committed growth in the calculation of the effluent limitations.

The raw waste data for mill 512 have been revised to reflect the annual average production rate rather than the maximum seven days. The commenter's reference to demonstrated production capacity or committed growth would more appropriately be addressed to the NPDES authority because development of the effluent limitations uses actual production data for the period of time for which the waste water data are used.

38. A number of commenters were concerned that the data base was biased towards mills located in southern climates and that because of better treatment efficiencies, this resulted in overly stringent limitations for mills in northern climates.

The Agency has examined the location of mills included in the data base to determine if mills located in southern climates are achieving effluent qualities better than those in northern climates. The results of the analyses as shown in the Development Document show that comparable effluent qualities are being achieved by mills in both locations. It should be pointed out that the type of biological treatment system upon which the limitations are based for mills in the northern climates is different than for mills located in southern climates, since treatment systems can be designed to take into account the effects of temperature on biological treatment efficiencies. Design for temperature considerations does not necessarily eliminate all impacts on treatment efficiencies, but the impacts can be minimized to the point where effluent variabilities for mills using treatment systems representative of BPCTCA are similar for mills located in both northern and southern climates. These points are demonstrated by a number of mills in Northern climates which are presently achieving the effluent limitations using the identified technologies. See section VII of the Development Document.

39. Concern was expressed by one commenter that the Agency ignored TSS levels as a basic factor in development of the subcategories. The commenter stated that many of the technologies discussed in the Development Document were for the reduction of TSS and that this should logically be a significant factor in subcategorization.

Many of the technologies identified in the Development Document are for the reduction of TSS as the commenter contends. However, the two primary factors of external treatment design are flow and BOD5 which were appropriately used as the primary bases for subcategorization. Design considerations for raw waste TSS relate primarily to primary treatment and sludge disposal since the TSS design considerations of biological treatment are more related to the raw waste BOD (due to generation of biological suspended solids) than to the raw waste TSS. Therefore, raw waste TSS is not as critical a factor as flow and BOD5.

40. One commenter felt that chemical addition in secondary clarifiers in order to improve suspended solids removal should be included as a necessary component of BPCTCA.

BPCTCA has been identified by the Agency to include commonly practiced internal controls, primary treatment, and biological treatment. The biological treatment portion of BPCTCA includes design and operating provisions for suspended solids removal. The effluent limitations are based upon well designed and operated aerated stabilization basins and activated sludge systems without the use of chemical addition in secondary clarifiers. This is not to say, however, that chemical addition in secondary clarifiers is not an available alternative technology which can be used to achieve the effluent limitations. Mills may choose to add chemicals to their secondary clarifiers to improve TSS (and BOD5) removal in order to make up for some design and operating deficiency in some other part of their treatment system which results in high TSS levels in the final effluents.

41. One commenter stated that the effluent limitations for the non-integrated tissue subcategory appear to be achievable with the Agency identified technology but that the explanation of how the actual limitations were determined was somewhat confusing. The commenter suggested that the precise methodology employed by the Agency be clarified.

The explanation of the method used in determining the effluent limitations for the non-integrated tissue subcategory has been revised to show how the effluent limitations were determined.

42. One comment was received that stated that EPA should examine the impact on production and raw waste load of using cull logs and sawdust. The commenter contended that the use of an annual average production would not properly describe the impact on raw waste load during times when large percentages of a mill's wood supply were cull logs and sawdust due to the lesser yields and higher waste loads. The commenter suggested that defining production as the maximum seven days of mill capacity would properly address the alledged problem.

The Agency believes that defining production as the annual average is entirely appropriate since the effluent limitations are based upon annual average production data. Issuance of NPDES permits based on maximum seven days of production using effluent limitations which are based upon annual average production would be inconsistent. Regarding the impact of cull logs and sawdust on production and raw waste loads, these items are included in the data base and any impacts are more than taken into account in the use of maximum 30 days and maximum day variability factors which were developed from actual mill data included in the data base. It should be noted that no specific data were submitted on the impacts of cull logs or sawdust.

43. The comment was made that off-the-machine production does not necessarily reflect production on any particular day since it does not take into consideration trim and furnish that are in various parts of the system as storage.

The Agency agrees with the commenter but feels that it is relatively unimportant when using annual average production since any particular day of production is included in the long term average.

44. One commenter stated that zinc hydrosulfite bleaches to a higher brightness level than sodium hydrosulfite and in order to achieve the same brightness levels more sodium hydrosulfite is required. The commenter was concerned because sodium hydrosulfite costs more and the Agency did not include such costs in the Development Document.

The zinc effluent limitations were revised and are now based upon chemical coagulation, flocculation, and sedimentation of waste waters from mills using zinc hydrosulfite in the bleaching process. As a result, the zinc limitations were made less stringent. Costs of achieving the effluent limitations were determined and are included in Section VIII of the Development Document. After consideration of these costs in the economic impact analysis, it was determined that the conclusions were unaffected.

45. One commenter was concerned that the TSS limitations were overly stringent since the systems that he had investigated discharged TSS levels of 50 mg/l to 80 mg/l on many days using secondary clarifier overflow rates as low as 300 gpd/sq. ft.

The TSS effluent limitations are based upon annual average TSS levels of approximately 50 mg/l. The maximum day limitations were determined by multiplying the annual average TSS level by the daily maximum TSS variability factor which is 3.38. Using 50 mg/l as an example of the TSS annual average, the daily maximum limitation would be based upon 169 mg/l which is well above the 50 to 80 level mg/l with which the commenter is concerned.

46. A number of comments were received that were concerned with the selection of BOD5, TSS, ammonia, zinc, and pH as significant pollutant parameters. In addition,

several commenters stated that separate subcategories should be established for mills discharging to marine waters or into large bodies of water. The commenters suggested that BPCTCA for these mills would be primary treatment and deep water outfalls.

Both of these concerns were considered by the Agency prior to publishing the interim final regulations, and responses to these comments are contained in the preamble to those regulations. It can be again pointed out that Section VI of the Development Document presents the rationale for selection of each of the pollutant parameters.

47. One commenter suggested that mill closures were underestimated because average cost of compliance estimates were used and costs are recognized to vary substantially for individual mills.

The "average cost" approach was *not* used to identify or assess the impact of pollution abatement cost on possible closure candidates. The "average" or cost model approach was used solely to derive and aggregate the cost of compliance for (a) subcategories and (b) the total industry.

Closure candidates were identified on the basis of mill capacity and type and extent of in-place facilities for effluent treatment. Officials in these plants were interviewed by telephone, and from the information obtained plus process data, the costs and the resultant economic impact of achieving the effluent limitations were determined. Site-specific conditions were considered in developing the economic assessment of the closure candidates. Thus, closures were not underestimated because site-specific conditions were taken into account in determining the number of potential closures which would result from application of the regulations.

48. Several commenters noted that land costs were excluded from the average cost of compliance estimates and therefore concluded that land costs were ignored.

Land costs have not been ignored. They were not included in the industry-wide estimates because: (1) they are extremely variable, (2) many firms already own the land and do not face out-of-pocket costs, and (3) they would total only about $25 million industry-wide which is less than 1 percent of the total capital requirement for water pollution control. Availability of land for treatment technologies was considered in assessing a closure candidate.

49. Some comments noted that specific assumptions in the cost of compliance estimates were unrealistic and resulted in an underestimate of pollution control costs. More specifically, the commenters were concerned that the costs of sludge disposal were based upon land disposal which is less costly than sludge incineration which may have to be used by a number of mills.

It is true that the Development Document assumes land disposal of sludge and that the capital and operating costs for compliance would be greater for an individual mill if it were required to employ the incineration technique for sludge disposal. However, it appears that separate sludge incineration will only be used by a few mills, if any at all, and thereby, the overall cost to the industry is not significantly changed.

50. Several commenters criticized the basic methodology used in the economic report. The commenters contended that the report failed to recognize that firms possess limited capital resources and that pollution control investment will result in either slower capacity growth or increases in prices (and profits) in order to replenish available investment funds. The commenters concluded that the economic analysis ignored the impact of pollution control expenditures on potential capacity shortage or capital availability.

The concept that the pool of investment funds is fixed and that pollution control costs force a substitution from capital expansion investment is incorrect within the context of accepted economic theory. Firms can raise funds in capital markets and do not have to rely on price increases to replenish capital funds spent on pollution control. According to economic principles, pollution control should induce price increases which are sufficient to maintain an adequate return on investment. An adequate return is measured by the weighted cost of capital for debt and equity for the pulp and paper industry. The estimate of long term price impacts was computed in this manner.

Nevertheless, the economic analysis explicitly studied whether effluent limitations would lead to shortage-induced price increases by comparing future supply and demand and the effect of pollution control on supply. Supply was estimated by adding to existing capacity the announced capacity expansions as reported by the American Paper Institute and deducting estimated capacity lost through mill closures due to pollution control and other factors. Therefore, the effect of pollution control in contributing to shortages is directly considered by deducting mill closures. It is indirectly considered to the extent that announced capacity expansions are made with recognition of the firms' priority capital commitments to pollution control requirements.

51. One commenter criticized the economic analysis for excluding an analysis of secondary impacts of pollution control. In particular, the argument was made that intermediary paper distributors will retain historic profit margins on sales and therefore, the increase in final prices will become a multiple of pollution control costs to the manufacturer of paper.

The assumption that profit margins at intermediary levels will remain fixed is unsupported. Under conventional assumptions used in economic analysis (i.e., profit maximization and no entry barriers), economic theory suggests that the constant profit margin assumption is false with regard to both the short run and long run. In the long run, prices adjust to changing investment, operating, and materials costs. However, any price pass-on at the primary level of paper production does not generally affect investment requirements or operating costs. Intermediary dealers' prices are increased to a minor extent by pollution control induced price increases on the product held in inventory and by the increased price of paper at the primary level. However, even taking these factors into account, long run price increases will increase proportionately less for intermediary dealers than for the primary manufacturer of paper. In the short run, the supply curve or marginal cost is only affected by the increase in the price of paper and the intermediary dealer could pass this amount along at most. Therefore, the extent of secondary impacts for both the short and long run analysis are less than the primary impacts. Since the primary price impacts were not significant, and because the primary impacts provided an upper bound, a detailed analysis of secondary effects was not necessary.

52. Some commenters were concerned that the amortization of capital costs at the rate of 15% as presented in the Development Document underestimated common thresholds for investment decisions in the industry.

The amortization rate of capital costs as presented in the Development Document (i.e., 15%) was used only for illustrative purposes in determining annual costs. The economic impact analysis used a rate of 12.8% because it was determined to be appropriate as discussed below. For the long run price impacts, it was assumed that the industry would require between 10% and 12% return on investment after taxes. These figures approximate the average cost of capital to the pulp and paper industry. The estimate of price impacts in the short run by the full cost pass-on method used a 16 year depreciation life and a 10% interest rate which yields a capital recovery factor of 12.8% on capital charges. The life of pollution control equipment is generally greater than 16 years. (See Economic Impact Analysis).

53. Several comments suggested that economic impacts were underestimated because the cost of SSL recovery was excluded.

The capital cost of SSL recovery was excluded from the industry-wide cost of compliance estimates because operating savings from such an investment can nearly justify the investment on economic grounds alone. Since the capital costs and operating and maintenance costs are nearly covered by the operating benefits (chemical and heat recovery) (See Section VIII of the Development Document) and since there are so few mills involved relative to other types of mills competing in the same product markets, any costs would have a negligible impact on the product market. In terms of the economic impact analysis, the screening procedure for plant closings paid particular attention to whether a mill had installed SSL recovery. Therefore, SSL recovery was explicitly considered in the analysis.

54. A number of commenters stated that the economic impact may have been understated because the costs in the Development Document appeared to be understated. The commenters cited several recent mill experiences with equipment purchases in concluding that the costs were low.

The Agency has carefully examined the basis for the costs presented in the Development Document and has concluded that the costs are accurate. In a number of cases, costs have been revised reflecting such things as revisions in the costs of sludge disposal (i.e. inclusion of the operation of the sludge disposal site), addition of 1.5% of capital investment for taxes and insurance, revisions in subcategory raw waste loads and effluent limitations, and revisions in the list of internal control measures included in the BPCTCA costs. The costs were examined in terms of economic impact and the conclusions of the economic impact analysis reached for the interim final regulations were unchanged. The costs were developed using June 1974 prices and were for various size model plants within each subcategory, and it is not expected that these model plants would precisely fit the commenters' mills so that direct price comparisons could be made and especially if the commenters' prices are more recent than the June 1974 prices (i.e., the commenters prices should be adjusted to June 1974 prices using appropriate cost indices).

The Agency finding that the basis for the costs are accurate is supported by findings of the National Commission on Water Quality (NCWQ). Using the costs in the Development, the economic impact analysis concluded that compliance with BPCTCA would cost $2.28 billion for capital expenditures and $250 million for operating and maintenance. The NCWQ through an independent contractor estimated that compliance with BPCTCA would cost $2.19 billion for capital and $140 million for operating and maintenance costs.

55. Several comments noted that the macroeconomic forecast included a recession in

1978 and may have therefore underestimated capacity shortages by underestimating demand.

The economic impact study used a forecast of national economic activity prepared by Chase Econometric Associates, Inc., which included the assumption of a recession in 1978. The analysis also utilized more optimistic forecasts of national economic activity. On the basis of further studies using these optimistic forecasts and thus assuming high demand for product, it was determined that (even after subtracting loss in capacity from mill closures) no significant capacity shortages could be identified.

56. One commenter was concerned that the BPCTCA TSS effluent limitations were abnormally high, especially in the dissolving sulfite subcategory. The commenter stated that at least one mill may be able to achieve the TSS effluent limitations while improperly operating the mill's treatment facilities by operations such as the following: (1) solids are not removed in the final clarifier to design levels (i.e., improper operation of the clarifier allowing the solids to be discharged over the weirs rather than being settled and removed with the sludge) or (2) solids are removed in the clarifier and then are reinjected back into the final effluent. The commenter felt that allowing pollutants to be discharged by such types of improper treatment facility operations was contrary to the concept of best practicable control technology currently available. The commenter suggested that either the TSS limitations should be made more stringent or that a settleable solids limitation of 1.0 milliliter per liter be established in addition to the TSS limitations.

The Agency has determined the effluent limitations based upon all available data from mills properly operating treatment facilities representative of the best practicable control technology currently available. It is emphasized that the determined effluent limitations are minimum levels of control and more stringent limitations can be established in NPDES permits.

The Agency concurs with the commenter in that improper treatment facility operations are contrary to the intent of Congress in establishing the best practicable control technology currently available. Certainly, treatment facilities should be operated such that pollutants are removed to the maximum efficiency and that pollutants, once removed, should not be allowed to be reintroduced into the final effluent. It should be pointed out that most NPDES permits contain requirements that waste water treatment facilities are to be operated at maximum efficiency at all times.

While establishment of settleable solids effluent limitations in the regulations is not appropriate at this time, the Agency feels that requirements for settleable solids limitations of 1.0 milliliter per liter in NPDES permits would be proper in such cases.

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